

ABSTRACT OF THE DISCLOSURE

The invention provides a process for making a let-down of glass fiber reinforced composite comprising a polymer matrix and from 5 wt.% to about 60 wt.% of reinforcing fibers long fibers. The fibers are incorporated in the let-down as a concentrate of pultruded composite of substantially parallel fibers and thermoplastic polyamide where fiber length equals pellet length. The fibers in the let-down have improved dispersion and orientation in the final thermoplastic polymer matrix thereby providing substantially improved physical properties from the forming of the fiber reinforced pellet with a modified pellet polymer matrix.

The long fibers are incorporated as a concentrate pellet in the final matrix polymer by mixing pellets with the final polymer compound in a heated extrusion mixing zone used to convey a composite melt into a shaping zone, whereby the mixing under heat and rotational shear disperses the long fiber-reinforced pellets into the let-down matrix polymer.